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This report is part of the National Network for Environmental Management Studies (NNEMS) under the auspices of the Office of Cooperative Environmental Managementf of the U. S. Environmental Protection Agency.

Non-hazardous solid waste management is a serious and persistent issue for Indian lands which encompass 87,000 square miles and include the country's 280 Indian reservations as well as approximately 200 Alaska native villages. EPA's role has been, and remains, indirect because the management and regulation of non-hazardous solid waste is predominantly the responsibility of State and local governments. The Resource Conservation and Recovery Act (RCRA) includes Indian Tribes and Alaska native villages in the definition of municipalities while federal legislation and federal case law affirms the right of tribes to self-determination. Including Tribes under the definition of municipalities results in a "gap" in RCRA.

This paper examines the problem of non-hazardous solid-waste on Indian lands and attempts to establish the extent of the problem. It outlines the current roles of federal agencies involved in the issue, presents three regulatory and legislative options, and recommends the option which best enables the EPA to effectively aid the tribes in the management of non-hazardous waste on Indian lands

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*This paper was written to fulfill the requirements of EPA's National Network for Environmental Policy Studies.

**This paper is not an official EPA document. This paper's opinions and recommendations reflect the author's observations only!

Disclaimer

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I. EXECUTIVE SUMMARY

What to do with the nation's increasing supply of non-hazardous solid waste is quickly becoming a high priority in the United States. Non-hazardous solid waste management is a serious and persistent issue for coastal communities, large cities, and Indian lands. Indian lands encompass over 87,000 square miles and include the country's 280 Indian reservations as well as approximately 200 Alaska Native villages.

This paper will examine the problem of non-hazardous solid waste on Indian lands. It will attempt to establish the extent of the problem, outline the current roles of federal agencies involved in the issue, and present three legislative and regulatory options. Further, this paper will recommend the one option which will best enable the Environmental Protection Agency (EPA) to effectively aid Tribes in the management of non-hazardous solid waste on Indian lands.

Data indicate that open dumping and open burning of non-hazardous solid waste commonly occur on a large proportion of Indian lands. A collection of existing surveys and federal agency observations indicates that at least 110 reservations plus numerous Oklahoma Tribes and Alaska Native villages lack adequate provisions for proper collection, storage, and disposal of non-hazardous solid waste. Solid waste disposal sites on Indian lands often lack any provisions for frequent covering of materials, monitoring of groundwater, or limiting access to the sites. In addition, many Tribes lack solid waste ordinances to enforce adequate methods of solid waste disposal and lack financial and technical capability to upgrade old or construct new solid waste facilities.

Many agencies have been working with Indian Tribes to help alleviate the problem of non-hazardous solid waste. EPA's overall role in non-hazardous solid waste has grown, at various paces, since the Agency's inception in 1970. EPA's role has been and remains indirect because the management and regulation of non-hazardous solid waste is predominantly the responsibility of State and local governments. Subtitle D of the Resource Conservation and Recovery Act (RCRA), passed in 1976, mandated EPA to promulgate regulations for State solid waste management plans and to set minimum standards for land disposal of Subtitle D wastes. Subtitle D gives EPA less direct authority over non-hazardous solid waste than Subtitle C of RCRA gives EPA over hazardous waste. Under Subtitle C, EPA maintained jurisdiction in all States and Indian lands for regulating and permitting hazardous waste until a State plan received approval from EPA's Administrator.

Under RCRA, Indian Tribes and Alaska Native villages are included under the definition of municipalities, along with towns, counties, and cities. This definition gives the impression that Tribes might be subject to State jurisdiction for hazardous and non-hazardous solid waste standards. Federal legislation and federal case law, however, have repeatedly affirmed the right of Tribes to self-determination, especially in regard to environmental regulation. A recent case which concerned Subtitle C excluded State jurisdiction in Indian lands under RCRA.

Including Tribes under the definition of municipalities has resulted in a "gap" in RCRA. This gap exists because, under the tenets of self-

determination, Tribes possess the authority to regulate Subtitle D wastes on Indian lands, but, under RCRA lack the same status of States. Therefore, EPA is unable to directly fund solid waste projects on Indian lands and to provide comprehensive technical assistance to Tribes for solid waste plans and regulations. Without technical assistance, Tribes are less likely and less able to develop long-range plans and build enforcement capabilities to prevent improper disposal of Subtitle D waste.

The problem of solid waste on Indian lands extends beyond EPA's legislative and regulatory issues. Capital construction funds to provide adequate solid waste facilities on Indian lands have been lacking in recent years. Federal agencies involved with sanitation facilities on Indian lands have been unable to provide necessary funds to help Tribes build and equip solid waste projects due to inadequate appropriations and administrative decisions. In FY 1982, the Office of Management and Budget (OMB) shifted funding for sanitation facilities for Indian housing from the Indian Health Service (IHS) to the Department of Housing and Urban Development (HUD). IHS, directed under P.L. 86-121 to provide sanitation facilities (which includes water, sewer, and solid waste) to Tribes, is currently receiving annual appropriations only for new, non-HUD housing projects on Indian lands. HUD does not include solid waste under its definition of sanitation facilities for new Indian housing. HUD's main funding source for solid waste projects on Indian lands, Community Development Block Grants, is a competitive program with limited resources. The Bureau of Indian Affairs (BIA) has a limited role in non-hazardous solid waste on Indian lands, consisting mainly of technical advice for siting of facilities. Therefore, Tribes have few places to obtain adequate technical assistance, training, and funding for solid waste projects. This issue is currently being examined by the appropriate federal agencies in an Inter-agency work group that will develop capital construction funding options and definition of agency roles in FY 1989.

Three options exist for EPA itself to better address the issue of solid waste. The first option would involve a statutory change to RCRA to allow EPA's Administrator to treat federally recognized Indian Tribes as States subject to stipulations similar to those outlined for Tribes under the 1986 Safe Drinking Water Amendments (P.L. 99-339). The first option would also include appropriations for the development of Tribal solid waste (Subtitle D) management plans similar to funds which EPA offered to States when RCRA was first passed. The second option involves EPA drafting rules to treat Tribes as States for the purposes of Subtitle D. The third option allows EPA to continue present types of activities on Indian lands under RCRA by funding additional pilot projects for solid waste projects on Indian lands.

This paper recommends that the first option be adopted. It would allow EPA's Administrator to define Tribes as States under RCRA. This option encourages Tribes to formulate long-range solid waste plans, to work cooperatively with surrounding communities, and to build regulatory capabilities.

II. BACKGROUND

A. EPA and Non-Hazardous Waste Management

The Environmental Protection Agency's (EPA) role in solid waste management began with the Agency's inception in 1970. At that time, the Agency assumed the Department of Health, Education, and Welfare's responsibilities for implementing the Solid Waste Disposal Act (SWDA, P.L. 89-272), a statute in which Congress established a new program to:

> initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal and ... to provide technical and financial assistance to State and local government and interstate agencies in the planning, development, and conduct of solid-waste disposal methods. (79 Stat. 997)

EPA's role was further defined in 1976 when Congress passed the Resource Conservation and Recovery Act (RCRA, P.L. 94-580) which amended SWDA. Subtitle D of RCRA set up a program in which States (the definition of States includes the 50 states and six territories) could submit solid waste management plans to the Administrator of EPA and, in turn, be eligible for federal funding to implement those plans. EPA was also directed to promulgate national minimum standards for land disposal of Subtitle D wastes. In 1979, the Agency's published minimum criteria for methods of solid waste disposal and guidelines for State solid waste management plans in 40 CFR Parts 256 and 257. To facilitate State solid waste management program development, EPA distributed approximately $10 million nationwide to State governments from 1980 to 1981.

B. EPA Hazardous Waste Programs

In addition to solid waste management, Subtitle C of RCRA called for the development of a hazardous waste management program. Subtitle C empowered EPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave". As a result, EPA established a national hazardous waste management program which identified categories of hazardous waste, set minimum standards for the handling of hazardous waste, and organized a system of permits to implement hazardous waste regulations which were promulgated under 40 CFR Parts 260-270. Unlike the Subtitle D program, which allowed each State to develop its own solid waste management program, the RCRA hazardous waste management program was designed to be a well-defined federal program managed by EPA until a State could obtain authorization from EPA to administer its own program (40 CFR Parts 271-272). Until recently, the Agency's major focus has been on the hazardous waste management program.

C. HSWA and Recent EPA Actions Concerning Subtitle D

The most recent legislation to address hazardous and solid waste, the 1984 Hazardous and Solid Waste Amendments (HSWA, P.L. 98-616), reinforced and refocused EPA's directive to address the growing problem of Subtitle D waste. Section 302 of HSWA directed EPA to evaluate the adequacy of its Subtitle D program, report the results to Congress, and develop new criteria for facilities which receive household or small quantity generator hazardous waste, including, at a minimum, criteria for locating and monitoring of landfills and for corrective action for landfills not in compliance.

EPA's authority under RCRA and HSWA to regulate Subtitle D waste remains much less defined than the comprehensive hazardous waste program; States are the enforcement agents for their own regulations which must be at least as stringent as the federal criteria. No federal permitting program for Subtitle D exists as it does for Subtitle C (hazardous) waste, although HSWA does give EPA the "discretionary authority to enforce the revised criteria in States that have not developed an adequate enforcement program" (EPA Draft Report, p.2). Regulations defining the exact nature of such enforcement actions have not yet been promulgated.

D. Solid Waste on Indian Lands

Under RCRA's Section 1004(13)(A), Indian Tribes are included in the definition of municipality as

> a city, town, borough, county, parish, district, or other public body created by or pursuant to State law, with responsibility for the planning or administration of solid waste management, or **an Indian tribe** or authorized tribal organization or Alaska Native village or organization ...[emphasis added]

This definition, in conjunction with the difference in the Subtitle C and Subtitle D programs, has created a "gap" in the RCRA regulation of non-hazardous solid waste management on Indian lands[1]. Municipalities are generally under the jurisdiction of States and, therefore, RCRA gives the impression that Tribes are subject to State Subtitle D regulations and objectives (EPA Draft Report, p.46). However, the doctrines of Indian self-determination and Tribal sovereignty have been repeatedly affirmed by the Supreme Court, Congress, and the President (See Appendix III for a short legal review of Indian law). In addition, Congress has changed other environmental laws to treat Tribes as States for the purposes of environmental regulation, and EPA has issued as policy which commits the

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[1] This report will use the term "Indian lands" to carry the same definition as Indian country. "Indian country" in its legal definition encompasses broader range of Indian communities including reservations and areas where federally recognized Tribes live but have little jurisdiction. See 18 U.S.C. Section 1151 (1982) for a definition of Indian country.

Agency to working with Tribes on a government-to-government basis.

States are the central focus of RCRA's attention. Consequently, nearly all of EPA's technical advice, guidelines, and relationships are directed toward State agencies. Tribes have the authority to administer their own environmental programs including Subtitle D waste, yet many Tribes either lack regulations which specifically address solid waste or lack the enforcement capabilities to control improper methods of solid waste disposal. Tribal governments, under RCRA's definition of municipalities, were unable to receive grants for Subtitle D management plans in 1980 and currently are not offered, proportional to their population, a similar amount of technical assistance that States receive.

Because no federal statute mandates EPA to comprehensively regulate non-hazardous waste management practices in Tribal or State lands and few resources are devoted to improving Tribal capacity to improve waste management practices, consistent enforcement of RCRA's Subtitle D standards is not available to those people living on Indian lands without Tribal provisions for solid waste collection and disposal. The "gap", which is the result Tribes being included under the definition of municipalities in RCRA, leaves remedies for the growing problem of non-hazardous solid waste on Indian lands limited and clouded.

E. Focus of This Report

This report will attempt to establish the extent of the non-hazardous solid waste problem throughout Indian lands, outline the current roles of federal agencies working to correct problems with solid waste management on Indian lands, summarize Tribal and federal agencies' actions necessary to improve Subtitle D waste management on Indian lands, and discuss how EPA can help to alleviate solid waste problems on Indian lands by looking at several alternative scenarios.

III. SOLID WASTE ISSUES ON INDIAN LANDS

Indian lands, for the most part, are located in rural areas (See Appendix I for further description of Indian lands). Until the last few decades, most rural areas disposed of solid waste through burning in open dumps, burning in barrels or simply dumping it into gullies. Over the last twenty-five years, most State and local governments and some Tribes have centralized collection and disposal methods and have directed the waste to landfills, paper and metal recycling centers, and waste-to-energy facilities. However, data gathered by those living and working on reservations strongly indicate that reservations contain a greater proportion of open dumps and other unsound disposal methods than other rural areas. These unsound disposal methods constitute immediate and long-term safety, health, and environmental risks. The evidence for such an assertion is listed below.

A. EPA Observations

Since the passage of HSWA, EPA has concentrated its Subtitle D efforts upon issues surrounding municipal solid waste (MSW), which consists of refuse produced by households and commercial business. (Other types of Subtitle D wastes include infectious wastes, non-hazardous industrial wastes, sewage wastes, mining waste, oil and gas drilling waste, tires, etc.) An EPA Municipal Solid Waste Task Force began work in March 1988 to renew EPA leadership and to develop a national strategy for MSW (EPA MSW Task Force, p.2). In addition, EPA's Office of Solid Waste (OSW), as mandated by HSWA [Section 302(a)(1)], has developed a Draft Report to Congress on solid waste that evaluates the adequacy of the Subtitle D regulatory program and contains recommendations for improvements (EPA Draft Report, p.1).

The MSW Task Force and the Draft Report to Congress both found that serious deficiencies are evident in EPA technical assistance, Subtitle D data, current federal criteria, and State regulations and plans (EPA Draft Report, ES-2). Twenty-five States have received approval from the EPA administrator for RCRA solid waste management plans. Meanwhile, many of the nation's local governments face crises on what to do with their waste over the next few years. Currently 80 percent of the nation's MSW is sent to landfills, 11 percent is recycled and nine percent is incinerated (EPA Briefing, p.13). Three-fourths of the country's over 6000 landfills will reach capacity within 15 years. By 1991, 45 percent of the nation's landfills will be full (EPA Draft Report, p.10).

This problem is equally apparent in Indian lands. OSW's Draft Report to Congress mentions that "Indian Tribes perceive municipal solid waste disposal as a current and future environmental problem" (p. 28). EPA currently has no centralized data base specific to pollution problems on reservations, so most of the evidence of Tribal problems with solid waste comes from many regional personnel who conduct inventories of problems on reservations and work regularly with tribal leaders. Region VII EPA staff indicate that solid waste is the number one environmental problem facing Tribes in that region. EPA Headquarters staff have witnessed significant problems with municipal and non-hazardous industrial waste on Indian lands. EPA Region VIII affirmed that the problem of solid waste on Indian lands is persistent and long-term.

B. Americans for Indian Opportunity Survey

The most informed sources concerning the state of solid waste disposal on Indian lands are the Tribes themselves. The Americans for Indian Opportunity (AIO) published its Survey of Environmental Protection Needs for Reservations in 1986 through a grant from EPA. This survey distributed questionnaires to 74 Tribal governments and received 48 responses. This sample represents nearly half of the Tribal reservation population and three-fourths of the total land which the federal government holds in trust for the Tribes (AIO, 3).

Of the 48 responses, 24 Tribes said solid waste was a problem in their communities. Exactly what constituted a problem with solid waste was not

clear from the survey. For example, some Tribes considered individual incineration of trash to be acceptable while other Tribes considered this type of open burning to be improper (AIO, Narratives). The responses did reveal that community or large open dumps exist on 24 reservations, while only 10 of the Tribes contract with municipal or private companies for solid waste collection and disposal services.

As a whole, solid waste was second only to water quality as a concern in the AIO survey. The survey revealed that 65 percent of the reservations responding depend upon ground water as the sole source of drinking water, and, in the narratives which accompanied the survey, some Tribes expressed concern over a connection between solid waste management and groundwater as a drinking water source. The exact nature of this health risk was not clearly expressed in the survey, due, in part, to a lack of Tribal staff experienced in the evaluation of environmental problems. Twenty-eight of the 48 Tribes in the AIO survey have environmental management programs on their reservations, 21 of which monitor solid waste (AIO, 5).

C. Council of Energy Resource Tribes' Surveys

In 1988, the Council of Energy Resource Tribes (CERT) used the AIO survey and a Great Lakes Indian Fish and Wildlife Commission Survey as bases with which to correlate data from all but one of the 29 Tribes in the EPA Region V. Twenty-one Tribes were visited by CERT and EPA staff, and seven additional Tribes were assessed from the AIO survey and CERT data. The results were consistent with the those in the AIO survey. Eight Tribes listed water pollution as a primary concern and 13 more Tribes listed it as a concern. Solid waste was the second most prevalent environmental concern (water pollution was first). Seven Tribes listing solid waste as a primary concern and 14 more Tribes listing solid waste as a secondary concern. It should be added that concern for water quality is especially significant in Region V since much of the Indian land there has permeable soil, shallow groundwater, and a number of large lakes and rivers.

In addition, CERT, in 1987, conducted a review of solid waste and wastewater conditions on tribal land connected to the Southern Indian Health Council in California. Extensive evidence, including a list of sites, photographs, and regulations, of solid waste practices on four reservations, Barona, Viejas, Manzanita, and Campo, was documented in the survey. The summary of the review states that:

> All [of the four] reservations visited have one or more occurrences of improper solid waste disposal. Numerous unauthorized dumps are located throughout the area and indiscriminate roadside dumping by people living outside the reservations is occurring. These activities can adversely effect the health of the tribal members and the spiritual and economic value of the reservations. The one authorized dump located on the Barona Reservation is not well maintained. The solid waste conditions on the Barona, Viejas, Manzanita, and Campo Reservations are detrimental and undesirable from

> a public health, potential water quality, and general engineering point of view. (CERT, 1987, p.i)

The review goes on to say that none of the Tribal governments in the four reservations have any ordinances or regulations to control open dumps and the federal government has no national solid waste regulation program, "as a result, there is a jurisdictional vacuum without effective legal mechanisms for the regulation or prohibition of dumping on the tribal lands" (CERT, 1987, p.ii).

D. Indian Health Service Data

Additional data regarding solid waste management on Indian lands is collected annually by the Indian Health Service (IHS). Within IHS, the Sanitation Facilities Construction Branch (SFCB) of the Division of Environmental Health is authorized to provide water, sewer, and solid waste facilities to all federally recognized Tribes. IHS maintains a prioritized list of projects necessary to address funding deficiencies on Indian lands. In 1987, deficiencies for solid waste disposal were estimated to be $31,339,000 on nearly 70 reservations, plus numerous Alaska Native Villages and Oklahoma Indian communities.

It is important here to mention that a deficiency does not necessarily indicate a problem across an entire reservation but may reflect a problem within a group of 50 to 1500 houses in one community. Deficiencies can result from a lack of landfills, the need for a collection truck or compactor, the need for a fence around a landfill, absence of garbage cans, or absence of a comprehensive waste management plan.

Nation-wide, the IHS' deficiency list contains cost estimates are the result of a joint assessment of each community by IHS and Tribal personnel. IHS staff acknowledge that estimates may be low for solid waste (Larry Garten, personal communication), as a result of IHS's decreased amount of resources available to fund solid waste projects in recent years and as a result of the decreased emphasis placed on the provision of water supply and waste disposal facilities.

The great extent of unmet solid waste management needs identified by IHS' Phoenix area which covers the tribes in States of Nevada, Utah, and Arizona is indicative of the magnitude of the problem throughout Indian lands. The Phoenix area of IHS has documented 58 disposal sites on Indian lands in those three states of which two are sanitary landfills and four are modified sanitary landfills. Fifty-two sites are classified as open dumps (Garten, p.1). In comparison, ten communities in the area use off-reservation landfills for their solid waste.

LIST OF RESERVATIONS BELIEVED TO HAVE A PROBLEM WITH SOLID WASTE MANAGEMENT: Demographics and Sources of Data

RESERVATION	STATE	EPA REGION	IHS AREA	BIA AREA	TRIBAL POPULATION	*SIZE OF RESERVATION	EPA	AIO	CERT	IHS ESTIMATE OF NEED ($)
Allegany	NY	II	Nashville	Eastern		:		Y		
Bad River	WI	V	Bemidji	Minn	1528	56346	:		Y	
Barona	CA	IX	Phoenix	Sacra	140	5180	:		Y	75000
Bay Mills	MI	V	Bemidji	Minn	458	2209	:		Y	
Big Bend Rancheria	CA	IX	Phoenix	Sacra	6	40	:			3000
Blackfeet	MT	VIII	Billings	Billings	7193	946844	:			330000
Bois Forte/Nett Lake	MN	V	Bemidji	Minn	1491	41863	:		Y	75000
Campo	CA	IX	Phoenix	Sacra	110	15000	:		Y	10000
Cataraugus	NY	II	User	Eastern		:		Y		
Cheyenne River	SD	VIII	Aberdeen	Aberdeen	5177	1395904	:	Y		125000
Choctaw (Missippi)	MS	IV	User	Eastern	4932	17926	:	Y		
Cochiti Pueblo	NM	VI	Albuq	Albuq	917	53794	:			7000
Colorado River	AZ/CA	IX	Phoenix	Phoenix	537	262801	:	Y		
Colville	WA	X	Portland	Portland	3868	1059199	:	Y		
Cortina Rancheria	CA	IX	Phoenix	Sacra	98	640	:			6000
Duck Valley	ID/NV	X/IX	Phoenix	Phoenix	1640	290000	:			226000
Duckwater	NV	IX	Phoenix	Phoenix	125	3814	:			12000
Fallon Colony	NV	IX	Phoenix	Phoenix	737	60	:			72000
Fond Du Lac	MN	V	Bemidji	Minn	1486	21897	:		Y	
Forest County Potawatomi	WI	V	Bemidji	Minn	423	11692	:	Y	Y	
Fort Belknap	MT	VIII	Billings	Billings	2260	588756	:	Y		
Fort Berthhold	ND	VIII	Aberdeen	Aberdeen	3310	419362	: Y	Y		50000
Fort Hall/Washakie	ID	X	Portland	Portland	3655	522499	:	Y		
Fort McDermitt	NV/OR	IX/X	Phoenix	Phoenix	671	35000	:			42000
Fort McDowell	AZ/CA	IX	Phoenix	Phoenix	430	24680	:			15000
Fort Totten	ND	VIII	Aberdeen	Aberdeen	3565	53239	: Y			
Gila River	AZ	IX	Phoenix	Phoenix	10648	371932	:			2100000
Goshute	NV/UT	IX/VIII	Phoenix	Phoenix	124	70489	:			127000
Grindstone Creek Rancheria	CA	IX	Phoenix	Sacra	143	80	:			40000
Hannahville (MI Potawatomi)	MI	V	Bemidji	Minn	328	34120	:		Y	
Hoopa Valley	CA	IX	Phoenix	Sacra	1913	86672	:	Y		240000
Hoopa Valley Extension	CA	IX	Phoenix	Sacra		5373	:	Y		115000
Hopi	AZ	IX	Phoenix	Phoenix	9040	1560993	:	Y		
Hualapai	AZ	IX	Phoenix	Phoenix	1100	992462	:	Y		124000
Isleta Pueblo	NM	VI	Albuq	Albuq	2979	211026	:	Y		
Jicarilla Apache	NM	VI	Albuq	Albuq	5556	736768	:			120000
Kickapoo (KS)	KS	VII	OK City	Anadarko	585	6659	: Y			
La Jolla	CA	IX	Phoenix	Sacra	343	8197	:			75000
Lac Courte Oreilles	WI	V	Bemidji	Minn	2279	43610	:		Y	50000
Lac Du Flambeau	WI	V	Bemidji	Minn	1485	44686	:		Y	
Leech Lake	MN	V	Bemidji	Minn	4930	27580	:	Y	Y	
Los Coyotes	CA	IX	Phoenix	Sacra	208	25049	:			10000
Lummi	WA	X	Portland	Portland	2888	7678	:			100000
Makah	WA	IX	Portland	Portland	953	27234	:			300000
Manzanita	CA	IX	Phoenix	Sacra	52	3579	:		Y	10000
Menominee	WI	V	Bemidji	Minn	3574	222552	:	Y	Y	
Mesa Grande	CA	IX	Phoenix	Sacra	58	120	:			25000
Mescalero	NM	VI	Albuq	Albuq	5556	460678	:			120000
Miccosukee	FL	IV	User	Eastern	488	77158	:			65000
Middletown Rancheria	CA	IX	Phoenix	Sacra	64	108	:			6000
Mille Lacs	MN	V	Bemidji	Minn	942	3849	:		Y	30000
Moapa River	NV	IX	Phoenix	Phoenix	141	71954	:			60000
Morongo	CA	IX	Phoenix	Sacra	979	32254	:			75000
Nambe Pueblo	NM	VI	Albuq	Albuq	411	19076	:			240000
Navajo	AZ,NM,UT	IX,VI,VII	Navajo	Navajo	173018	14000000	: Y	Y		3211000
Northern Cheyenne	MT	VIII	Billings	Billings	[illegible]	436448	: Y	Y		47000
Oneida	NY	VII	Aberdeen	Aberdeen	[illegible]	[illegible]	: Y			
Oneida	WI	V	Bemidji	Minn	[illegible]	7741	:		Y	
Pala	CA	IX	Phoenix	Sacra	576	11480	:			75000
Pauma/Yuima	CA	IX	Phoenix	Sacra	108	5877	:			10000
Pechanga	CA	IX	Phoenix	Sacra	694	4093	:			75000
Picuris Pueblo	NM	VI	Albuq	Albuq	219	14947	:			86000
Pine Ridge	SD	VIII	Aberdeen	Aberdeen	19246	1784970	: Y	Y		
Pojoaque Pueblo	NM	VI	Albuq	Albuq	90	11601	:			75000
Potawatomi (KS)	KS	VII	OK City	Anadarko	1315	21479	: Y			
Prairie Island, RW, MDW	MN	V	Bemidji	Minn	191	548	:		Y	
Pyramid Lake	NV	IX	Phoenix	Phoenix	1370	476728	:	Y		
Quinault	WA	X	Portland	Portland	2055	129307	:	Y		
Red Cliff	WI	V	Bemidji	Minn	1468	7569	:		Y	
Red Lake	MN	V	Bemidji	Minn	4069	564452	:		Y	150000
Resighini Rancheria	CA	IX	Phoenix	Sacra	838	228	:			60000
Rocky Boy's	MT	VIII	Billings	Billings	2484	108015	:	Y		
Rosebud	SD	VIII	Aberdeen	Aberdeen	11685	955057	: Y	Y		
Ramsey Rancheria	CA	IX	Phoenix	Sacra	50	185	:			3000
Sac & Fox	IA	VII	Aberdeen	Minn	691	3535	:			60000
San Carlos	AZ	IX	Phoenix	Phoenix	7157	1826541	:	Y		
San Ildefonso Pueblo	NM	VI	Albuq	Albuq	620	26196	:			170000
San Pasqual	CA	IX	Phoenix	Sacra	158	1379	:			70000
Santa Ana Pueblo	NM	VI	Albuq	Albuq	19	61413	:			80000
Santa Clara Pueblo	NM	VI	Albuq	Albuq	39	45244	:			124000
Santa Rosa	CA	IX	Phoenix	Sacra	129	11092	:			25000
Santa Ysabel	CA	IX	Phoenix	Sacra	950	15526	:			75000
Santee Sioux	NE	VII	Aberdeen	Aberdeen	519	26971	: Y			100000
Santo Domingo Pueblo	NM	VI	Albuq	Albuq	2678	61413	:			24000
Shakopee	MN	V	Bemidji	Minn	218	293	:		Y	
Sherwood Valley Rancheria	CA	IX	Phoenix	Sacra	155	292	:			10000
Sisseton/Lake Traverse	SD	VIII	Aberdeen	Aberdeen	3527	131528	:	Y		
Soboba	CA	IX	Phoenix	Sacra	691		:			75000
Standing Rock	SD	VIII	Aberdeen	Aberdeen	8612	547911	: Y	Y		125000
Stockbridge-Munsee	WI	V	Bemidji	Minn	793	15522	:	Y	Y	50000
St. Croix	WI	V	Bemidji	Minn	1227	1940	:		Y	50000
Sulphur Bank (El-Em)Rancheria	CA	IX	Phoenix	Sacra	137	50	:			11000
Susanville Rancheria	CA	IX	Phoenix	Sacra	401	150	:	Y		
Sycuan	CA	IX	Phoenix	Sacra	75	640	:			20000
Taos	NM	VI	Albuq	Albuq	1484	95334	:			316000
Tesque Pueblo	NM	VI	Albuq	Albuq	307	16810	:			90000
Te-Moak Battle Moutain Colony	NV	IX	Phoenix	Phoenix		683	:			6000
Torres-Martinez	CA	IX	Phoenix	Sacra	136	24565	:			75000
Tule River	CA	IX	Phoenix	Sacra	829	55356	:			60000
Turtle Mountain	ND	VIII	Aberdeen	Aberdeen	7744		: Y			30000
Uintah &Ouray	UT	VIII	Phoenix	Phoenix	2460	1021557	: Y			
Ute Mountain/Allen Canyon	CO/NM	VIII/VI	Albuq	Albuq	1329	589705	:			355000
Viejas/Baron Long	CA	IX	Phoenix	Sacra	187	1609	:		Y	75000
White Earth	MN	V	Bemidji	Minn	3547	56078	:	Y	Y	125000
Wind River	WY	VIII	Billings	Billings	5124	1888560	: Y			
Winnebago	NE	VII	Aberdeen	Aberdeen	1235	27308	: Y	Y		
Wisconsin Winnebago	WI	V	Bemidji	Minn	243	4285	:		Y	
XL Ranch	CA	IX	Phoenix	Sacra	22	9255	:			40000
Yankton	SD	VIII	Aberdeen	Aberdeen	2970	36558	: Y	Y		
Zuni Pueblo	NM	VI	Albuq	Albuq	8135	408563	:	Y		

*In acres, according to BIA 1987 figures

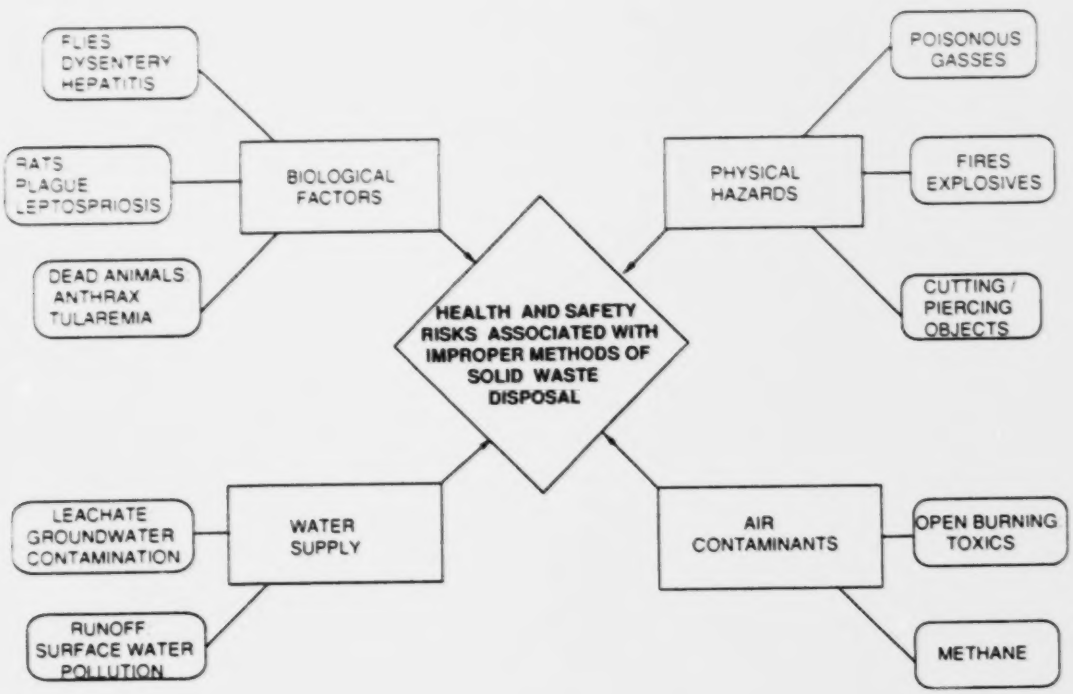
E. Compilation of Data

A comprehensive assessment of the solid waste problem on Indian lands has not been completed by any agency. All the data available from the various tribal surveys and federal agencies' assessments indicate that at least 103 reservations are believed to have a problem with solid waste disposal. (See table on page 9). Those reservations which contain inadequate solid waste disposal and collection systems have a combined Tribal population of 366,000 and constitute 57,000 square miles of the 87,000 square miles of reservation land.

A caveat here is necessary. Reservations with a solid waste problem may have some communities which adequately dispose of the waste, but the data have not been refined enough to identify the exact severity or scope of the problem. This list is not the result of a scientifically random survey. It is merely an indicator of the seriousness of the problem. Despite the weaknesses of the data collection, the evidence overwhelmingly points to a serious, national problem on Indian lands throughout the nation.

F. Human Heath and Environmental Risks

Improper disposal of solid waste results in a number of health and environmental risks. These include disease transmission, ground water contamination, and air pollution from burning of waste in dumps. (See chart below) IHS officials have documented cases of children burned by flammable material or cut by broken glass or other dump contents in improperly maintained disposal sites.



*BASED UPON AN IHS CHART DONE FOR THE HOPI SOLID WASTE PLAN

One of the original purposes of RCRA was to end the practice of open dumping. Regulations in 40 CFR 257.3 dictate that waste disposal sites must be covered periodically to prevent disease and minimize the number of bird hazards near airports. Disposal sites which allow contamination of ground and surface water are illegal under the Clean Water Act. Those disposal sites which disrupt flood plains and habitats of endangered species are also forbidden. Lastly, open burning and excessive methane releases that degrade air quality or pose risks of explosion are banned by the regulations.

HSWA emphasized groundwater protection. Regulations proposed August 30, 1988, establish a national performance standard for new and existing landfills. Though the regulations allow State and local governments flexibility in assessing the type of precautions necessary for lining new landfills and covering full landfills, the landfills must meet certain levels of groundwater purity.

These regulations highlight the interdependence of environmental problems. Improperly maintained solid waste disposal sites threaten drinking water supplies. This danger multiplies the cost of damage from leachate and runoff contamination. Aquifers can be made unusable, wells may need to be abandoned, new wells may need to be drilled, and, at worst, the land can be made uninhabitable and unusable.

The data listed above indicate that most Tribes are currently struggling to deal with the original RCRA provisions for upgrading or closing open dumps that threaten human health and the environment. New EPA regulations may be adopted by a few Tribes with environmental personnel experienced in monitoring and permitting. However, it is clear that the problem relative to new regulations and understanding of the dangers of improper disposal is growing rather than decreasing.

IV. FEDERAL AGENCIES' INVOLVEMENT IN SOLID WASTE MANAGEMENT ON INDIAN LANDS

A. EPA Indian Policy and Jurisdiction

EPA, despite its lack of a direct mandate for solid waste on Indian lands in RCRA, has contributed resources to promote better solid waste management practices on Indian lands. These efforts include national meetings with Tribes to outline the applicability of RCRA on Indian lands, technical advice when requested, and grants for pilot projects on Indian lands (EPA 1987 Activities Report).

During the 1970s, EPA's did maintain relationships with some Indian Tribes, but the contact was often irregular and scattered. Over the last four years, EPA has been working with Tribes on a government-to-government basis in all media (land, air, and water). This recent development is the result of two policy statements. In 1983, President Ronald Reagan issued a Federal Indian Policy to "reaffirm dealing with Indian tribes on a government-to-government basis and to pursue the policy of self-government for Indian tribes..." (p.2)

Secondly, in 1984, EPA issued an Indian Policy, which followed the guidelines of the Administration's Indian policy and committed the Agency to:

1. work directly with Indian tribal governments on a one-to-one basis rather than subdivisions of other governments.

2. recognize tribal governments as the primary parties for setting standards, making environmental policy decisions and managing programs for reservations, consistent with agency standards and regulations.

3. take affirmative steps to encourage and assist tribes in assuming regulatory and program management responsibilities for reservation lands.

4. take appropriate steps to remove existing legal and procedural impediments to working directly and effectively with tribal governments on reservation programs.

5. assure that tribal concerns and interests are considered whenever EPA's actions and/or decisions may affect reservation environments.

6. encourage cooperation between tribal, state, and local governments to resolve environmental problems of mutual concern.

7. work with other federal agencies which have related responsibilities on Indian reservations to enlist their interest and support in cooperative efforts to help tribes assume environmental program responsibilities for reservations.

8. strive to assure compliance with environmental statutes and regulation on Indian reservations.

9. incorporate these Indian policy goals into its planning and management activities, including its budget, operating guidance, legislative initiatives, management accountability system and ongoing policy and regulation development processes.

In 1970, when EPA was first formed, few environmental laws specifically mentioned Indian Tribes, and no laws stipulated that Tribes should be treated like States for the purpose of implementing their own environmental programs. In the past three years, three environmental laws have been amended to allow Tribes to regulate reservation environments substantially like States regulate State environments. The Safe Drinking Water Amendments of 1986 (PL 99-339) and the Water Quality Act of 1987 (PL 100-4) direct EPA's Administrator to promulgate regulations which outline the process in which the Administrator can transfer programs to a federally recognized Tribe with a governing body when he finds that the Tribe is reasonably expected to be able to carry out the program (Pope, p. 753). In the Superfund Amendments and Re-Authorization Act of 1986 (PL 99-499), Tribes are treated substantially as States.

RCRA has not yet been amended to treat Tribes as States. The original Solid Waste Disposal Act contained no language mentioning Indian Tribes at all. In 1970, the Resource Recovery Act (P.L. 91-512) amended the SWDA and set up a system of distribution to funnel monies to State and local governments. Indian Tribes are first mentioned in this piece of legislation, but only under the definitions of municipalities, similar to a city and county (Section 102). In 1976, when RCRA was passed, the only change to the previous solid waste acts in regard to definition of Tribes was to add Alaska Native villages under municipalities.

EPA has not approved any State hazardous or solid waste plans which attempt to regulate Indian lands under RCRA. The State of Washington claimed jurisdiction to regulate hazardous waste management on Indian lands in its application for Subtitle C program delegation based on RCRA's definition of Tribes as municipalities. Washington was denied authorization for this portion of the program by EPA for failure to adequately demonstrate legal authority and jurisdiction over Indian lands. This decision was appealed in the case of the State in Washington, Department of Ecology v. EPA (1985) before the Ninth Circuit Court (752 F.2d 1465). EPA asserted that a:

> State lacks authority unless the State affirmatively asserts authority and supports its assertion with an analysis from the State Attorney General.. EPA has concluded that the State's assertion is not adequately supported in law or by the analysis provided...Contrary to the State's argument EPA concludes that RCRA and the act of authorization do not convey to the State and authority relative to Indian lands jurisdiction. Rather a State must independently obtain such authority expressly from Congress. The State has not demonstrated such authority and to EPA's knowledge has not been granted such authority; EPA, therefore, will retain jurisdiction for operating the Federal program on Indian lands in the State of Washington. (48 Fed. Reg. 34 956-957 1983)

The three judge panel concurred with EPA's argument on the basis of the power of an administrative agency to interpret statutes as long as it is reasonable, and on the basis of federal Indian law which includes Tribal sovereignty which usually preempts State jurisdiction, the federal trust responsibility to protect Indian lands, and the canons of statutory construction which allow State jurisdiction on Indian lands only when there is clear Congressional intent (Pope, 741).

EPA's role in RCRA Subtitle D waste management on Indian lands was examined in a citizen suit filed under Section 7002 of RCRA: Mattie Blue Legs v. EPA, Administrator of the EPA, U.S. Bureau of Indian Affairs, U.S. Indian Health Service, and the Oglala Sioux Tribe (Civ. No. 85-5098, 1987). In this case, the plaintiffs, members of the Oglala Sioux Tribe, sought an injunction against the Tribal council, EPA, IHS, and BIA to ensure that solid waste on the Pine Ridge Indian Reservation was disposed of in compliance with RCRA. Open dumps existed in nearly a dozen communities within the reservation. Only one was fenced and none were supervised. The covering of the waste in

the dumps was irregular. According to testimony, many of the dumps were near housing, schools or surface water. Because the Oglala Sioux Tribal Council had enacted a garbage and refuse disposal ordinance to regulate the collection and storage of solid waste and promote health and control disease, the Tribal council was found to have jurisdiction over the collection and disposal of waste and to be subject to the stipulations of RCRA. The Judge said:

> The solution to open dumping on the Reservation is best left to the Indian people themselves through enforcement of tribal ordinances enacted by the duly elected tribal council. The council itself must recognize and then deal with this hazard to the health and welfare of the Indian people and the destruction to the environment in which its people live. The unsightly and unhealthy condition will diminish in direct proportion to the amount of pride in their communities which the council and the tribal members maintain (p.15).

The federal agencies' responsibility was more complex. BIA issued no permits for the use of the Oglala Sioux's land as disposal sites and had, along with IHS, contributed funds for equipment and technical advice for the Tribes solid waste program. However, facilities owned and operated by BIA and IHS contributed to the stream of solid waste which was deposited by the Pine Ridge Village Garbage Service in the open dumps. Because these agencies participated in disposal practices banned by RCRA, summary judgment against them was granted. They, along with the Tribal council, were ordered to set forth a plan to bring the dump sites into compliance (p.19). BIA and IHS have appealed the case in the 8th Circuit Court.

The Court found EPA to have fulfilled its mandates under RCRA and not to have further authority or statutory obligations:

> Under RCRA, the EPA does not have the Congressionally granted authority over open dumping under Title IV relating to discarded materials that it has under Title III relating to hazardous waste. Indeed, absent specifically enumerated powers, any enforcement encroachment into open dumping on the Pine Ridge Indian Reservation would be a violation of the inherent sovereignty of the Oglala Sioux Tribe (p.15).

This statement demonstrates the indirect nature of Subtitle D. The Tribe has jurisdiction over the regulation of Subtitle D wastes on its lands in this case. EPA's role is advisory and supplemental to the Tribes authority.

Though EPA has no direct jurisdiction for regulating landfills on Tribal land, the Agency has been directly involved in solid waste projects on Indian lands. EPA has funded two major pilot projects to address Subtitle C and D waste management on Indian lands. The Fort Berthold Pilot Project involves the monitoring of ground water for pesticide contamination and a solid waste project on solid waste management that has been ongoing since FY 1984. EPA

has awarded about $100,000, through the Council of Energy Resource Tribes, to the Tribal government to formulate a solid waste plan, conduct programs for public communication, and implement a reservation landfill and collection system. EPA has also helped the Tribe acquire surplus government equipment and apply for a Community Development Block Grant (Scherer, pp. 1-2).

The second EPA project is the Menominee Pilot Project in Wisconsin which involves the development of rules and regulations governing solid and hazardous waste management as well as surface and groundwater protection. In addition, a Memorandum of Agreement among the Menominee Tribe, the State of Wisconsin, and EPA was developed regarding roles for the implementation of tribal regulation of waste management and water quality. The Tribe has used Wisconsin's solid and hazardous waste code as a model for its own regulations and has cooperated extensively with the State's agencies. EPA's role in the project is mainly oversight and potential enforcement if the Tribe fails to follow federal standards (Olsen, p.11). This pilot project is not based on the authority granted by EPA to the Tribe under RCRA, but is an initiative by the Tribe to work cooperatively with Wisconsin and to tighten its enforcement capabilities over its own lands.

EPA's Region V is currently conducting a study to formulate generic solid waste management plans for Tribes within the region and is working to identify technologies and disposal methods which may be useful to Tribes around the Great Lakes.

B. Indian Health Service Role

Over the last 30 years, the Indian Health Service has been the main federal source for funding of solid waste facilities and technical assistance for Tribes. The Sanitation Facilities Construction Branch (SFCB), has spent approximately $10,000,000 on solid waste projects in Indian lands since the programs inception in 1959.
IHS describes its activities as follows:

> The IHS SFCB provides essential sanitation facilities and services to Indian and Alaska Native homes, communities, and lands under and pursuant to P.L.86-121... The goal of the sanitation facilities construction program is to improve the health of American Indian and Alaska Native people by improving the environment in which they live. This is to be accomplished by (1) providing safe water supplies and adequate means of liquid and solid waste disposal (2) encouraging and developing the desire and capability of the Indian people to operate and maintain the facilities provided in a safe and effective manner so as to assure continued health protection and benefits into the future (3) providing engineering consultation regarding environmentally related public health problems; and (4) by providing technical liaison with other governmental agencies, foundations, and groups relative to public health engineering and environmental health (IHS, 1988, p.2).

As described earlier, IHS maintains a prioritized list of deficiencies of

existing homes and communities for sewer, water, and solid waste facilities as well as deficiencies to establish and equip operation and maintenance organizations. IHS solid waste facilities are funded primarily through appropriations called "regular monies" which are funds appropriated for the purpose of reducing its deficiency list. SFCB received $5,000,000 in regular monies in FY1988 to provide existing homes with water, sewer, and solid waste facilities. These were the first monies appropriated to serve existing homes since 1983. This money was apportioned to IHS area offices which applied the funds to the prioritized list of deficiencies. Solid waste is at the top of the list in at least one area for a construction project on the Hopi Reservation.

In the absence of monies appropriated to service existing homes, the ability of IHS to further address this issue was significantly reduced by an administrative decision in 1982. The Office of Management and Budget and the Department of Housing and Urban Development (HUD) instituted a policy to provide funds for sanitation facilities through HUD for new housing. This was thought to be a more efficient means of delivering funds for the provision of Indian housing. However, IHS maintains control over funding for water, sewer, and solid waste involved with the construction of BIA housing, Tribal housing, and other federal programs.

Despite the limitations brought on by this arrangement, IHS continues to work with Tribes on solid waste management. IHS has provided Tribes technical assistance as they formulate waste management plans and also assisted them in seeking other funding sources for equipment and construction. These other sources do exist, but the resources are not extensive (See Appendix II a for list of alternative sources of funding).

C. Housing and Urban Development

HUD, through its Office of Indian Housing, provides funds for new housing on Indian lands. The Indian Housing Act of 1988, Section 203(b), which amended the U.S. Housing Act of 1937, mandates HUD's Secretary to "ensure the timely and efficient provision, through the Interdepartmental Agreement on Indian Housing, of any roads, water supply and sewage facilities, and electrical and fuel distribution systems". Since FY 1982, funds have been provided to IHS from HUD for water and sewer facilities. A Memorandum of Agreement (MOA) among the Tribal Housing Authority, HUD, and IHS pursuant to the Interdepartmental Agreement on Indian Housing (24 CFR Part 905, Subpt. B, Appendix I, 1983) details a process in which IHS constructs the water and sewer facilities for the housing if the Housing Authority wishes. From FY 1982 to FY 1987, HUD has provided nearly $63,000,000 to IHS for the construction of offsite water and sewer facilities to serve new housing for Indian families. The funding is done on a "pro-rata" cost basis in which HUD funds a proportion of the project equal to the number of new houses which the facility will serve.

However, the MOA and Interdepartmental Agreement on Indian Housing do not address solid waste. HUD has ruled out solid waste disposal under its definition of sanitation facilities (Lindquist memo, p.1) and has not provided funding for solid waste disposal for new Indian housing.

A source for capital costs for solid waste does exist within HUD. Community Development Block Grants (CDBG) administered by HUD were authorized under Title I of the Housing and Community Development Act of 1974. CDBG distributes funds to Indian tribes and Alaskan Native villages to promote sound community development by improving the housing stock; providing community facilities; and assisting the economic development of Indian communities. Solid waste projects fall under the definition of infrastructure grants. These types of grants include electrical and fuel lines and water treatment facilities. CDBG funds are limited and do not cover expenditures for collection equipment for solid waste projects, and Tribes have often concentrated efforts on CDBG grants for projects other than infrastructure such as economic development.

D. Bureau of Indian Affairs

A division of BIA, the Environmental Services Staff, is mandated to provide environmental examination of proposed activities and to ensure that BIA actions comply with applicable Federal statutes for environmental protection. This office and BIA personnel in the field offices are primarily involved with offering technical advice to Tribes on siting and maintenance of solid waste facilities. On occasion, BIA offers funds to Tribes for solid waste projects.

V. SUMMARY OF PROBLEM

The problem of solid waste management on Indian lands is complex. A few Tribes have their own collection and disposal systems which run efficiently and consistently. However, at least one-third of the reservations have serious problems with open dumps, individual incineration, or inadequate storage facilities. Factors which contribute to the problem are diverse: Sparsely populated Indian lands sometimes lack good waste management practices. Tribal governments often lack the expertise necessary for effective regulation and monitoring of solid waste facilities. The cost of comprehensive solid waste management is a barrier for the majority of families living within Indian lands. Lastly, people living in Indian lands may not be aware of the effects of unsafe disposal practices.

Federal agencies have, for the most part, been unable to adequately address the issue of solid waste on Indian lands. EPA has been hindered by the inclusion of Tribes under the definition of municipalities in RCRA which does not afford Tribes the same rights as States. Due to the nature of EPA's role under Subtitle D, the Agency possesses no authority to regulate or permit facilities on Indian lands which have no Tribal regulations and can only offer limited aid to Tribes for solid waste. IHS lacks adequate funding to address solid waste mandate under P.L. 86-121 partially because of the transfer of funds for water and sewer services to new housing to HUD. HUD has not included solid waste under its definition of sanitation facilities which are necessary for new housing. And HUD-CDBG funding is competitive and limited by stipulations on the funds use for solid waste projects.

Congress, Tribes, and federal agencies are beginning to recognize that

improper management of solid waste is a serious threat to human health and the environment. Improperly maintained solid waste disposal sites can easily become Superfund sites if the proper controls are not available to Tribes. Open dumps are a breeding ground for disease and a risk to children. Additionally, improper management of solid waste on Indian lands has detrimental effects upon the value of land and the amount of pride that people feel for the land.

To rectify the problem of solid waste on Indian lands will require an extensive amount of effort and resources by the Tribes and federal government.

VI. OPTIONS

Considering the complexities of this issue as described above, a number of options have been identified for future EPA action on solid waste management on Indian lands. However, as outlined above, EPA is one in a group of agencies involved with issue of solid waste on Indian lands. EPA's funding, experience, and jurisdiction is limited to establishing criteria and aiding Tribes in planning for solid waste management.

To rectify the whole problem, funds will be necessary to support solid waste facilities and equipment. In addition, roles for each federal agency must be defined. These topics are currently the subject of an Inter-agency work group on solid waste consisting of IHS, EPA, BIA, and HUD. This paper has been reviewed and commented upon by members of this Inter-agency work group.

In considering options for both EPA alone and the Inter-agency work group, two requirements for an effective solution to a problem. The first requirement is a greater management capacity of Tribes to administer solid waste programs. In the increasingly complex world of waste disposal regulations and technology and competition for limited resources, Tribes, like the federal government, face many challenges with limited resources.

Some Tribes, such as those involved in EPA's pilot projects, have built or are building programs which meet the requirements for an efficient and safe solid waste program. Many Tribes have environmental programs which include water or air but their ordinances have not dealt with solid waste. Many Tribes lack any type of environmental program. Tribes must institute programs which offer education, alternatives, and penalties to those who currently contribute to open dumps on Indian lands.

Tribes must also begin to institute long-term and immediate plans for the collection, storage, and disposal. This is the first step in assessing the financial needs of a Tribe. These solid waste plans may be as simple as working with a neighboring landfill or organizing a multi-reservation collection and disposal system. But the planning is the first step. Tribes in conjunction with federal agencies, must deal with issue of solid waste comprehensively and immediately.

The second requirement for adequate management of solid waste is funding

for the development and implementation of solid waste management plans and for capital costs of solid waste facilities. EPA, under RCRA, views planning as a vital part of an efficient solid waste program. To carry out comprehensive plans which analyze the waste stream, identify markets, and incorporate alternative funding sources, Tribes will require funds and technical advice.

Tribes also require funds to construct facilities and to obtain equipment to operate their solid waste program. Not every Tribe in the country will be able to support its own landfill or even its own collection system. Tribes with small populations, limited land bases, and inexperienced personnel lack the necessary funds and expertise to support an effective system of either disposal or collection. Yet each Tribe requires the opportunity to evaluate its own particular situation and to assess accurately what combination of services and technologies it will require. Many Tribes may need a truck for collection and a transfer station to hold the waste until it can be disposed of off the reservation. Larger Tribes may require a full scale system of closing open dumps and constructing a full collection and disposal service (See Hopi Plan). Recycling of paper, plastic, and metals, and composting of organic wastes may be feasible for many Tribes, especially if they are able to contract out as vendors to serve surrounding communities. These systems not only benefit the environment but they also allow tribes to expand their economic base and reduce unemployment.

Complicating the funding consideration of solid waste is the issue of operation and maintenance of the facilities after they are constructed. Many reservations have extremely high rates of unemployment and Tribal members often lack resources with which to pay for ongoing costs of a solid waste collection and disposal service. A project in the community of Bylas on the San Carlos Apache reservation was able to collect from 46% of households and discontinued service to those who did not pay for the project (Dellapenna, p. 1). Any solid waste management program on Indian lands must realize that if fees for operation and maintenance of the solid waste project are not adequate, other Tribal resources may be necessary to complement the fee structure, otherwise the system will be irregular and unstable.

Three options which combine various legislative, regulatory, and funding options specifically for EPA are outlined below.

Option A: Statutory Change of Definition of Tribes Under RCRA

Under this option:

-RCRA would be changed to direct EPA's Administrator to promulgate regulations for treating Tribes as States for all RCRA programs under stipulations similar to those in the Safe Drinking Water Act.

-Funds would be appropriated to EPA and made available to Tribes for the development and implementation of solid waste management plans.

OPTION A PRO:

1. Tribes are the primary authority for implementing and enforcing their own environmental programs within reservation borders, provided federal legislation does not preempt that power. Since States have limited, if any jurisdiction on Indian lands, this would successfully fill the gap in RCRA. Recognizing Tribes as States reaffirms that Tribes are entitled to the same responsibilities and privileges as a State. If a Tribe, particularly a small Tribe, would wish to enter into a cooperative agreement with a State for the purposes of planning under Subtitle D, the Tribe would be encouraged to do so.

2. Tribes, as defined as States under RCRA, would be afforded similar lines of communication, regular technical assistance, and guidelines that States have been afforded in the past.

3. Defining Tribes as States further raises the awareness among the Tribes themselves that solid waste is a problem which must be addressed immediately.

4. As mentioned in Part V of this paper, a statutory change alone does not completely resolve the problem of Subtitle D on Indian lands. States were offered grants for the development and implementation of solid waste management plans in the past. Under this option, Tribes will be offered the same opportunity as States were provided in Section 4007 and 4008 of RCRA. This provision for Tribes is especially important since States under the latest amendments to RCRA are required to revise permit programs to adopt new federal regulations. Again, special emphasis should be given to funding Tribes which take a regional approach to solid waste management, as RCRA outlines in its goals.

6. Allowing EPA's Administrator to treat Tribes as States for the purposes of RCRA also opens the opportunity for Tribes to construct plans for Subtitle C (hazardous waste) and Subtitle I (underground storage tanks) regulation and to assume primary role as enforcement agents of these programs, if they meet the necessary criteria.

OPTION A CON:

1. Legislative change and regulation development is often a long process. Solid waste is, for some Tribes, an immediate threat to human health and the environment and requires immediate action.

2. With an increasing federal deficit, legislation that calls for appropriations is controversial. Inadequate appropriations often result in incomplete solutions to the problem.

B. Option B: Draft Rules To Delegate RCRA Programs to Tribes

Under this option:

-EPA drafts rules to treat Tribes as States for the purposes of Subtitle D.

OPTION B PRO:

1. The advantages to drafting a rule treating Tribes as States for the purposes of solid waste are essentially the same as in Option A. The only additional advantage from EPA's and Tribes' standpoint is that the process will be expedited since the drafting of the rule could begin more quickly than legislative action.

OPTION B CON:

1. EPA's probably does not have the authority to treat Tribes as States under RCRA because RCRA defines Tribes as municipalities. Drafting rule that defines Tribes as States could result in court cases challenging EPA's ability to recognize Tribal jurisdiction for Subtitle D.

C. Option C: Continue Present Types of Solid Waste Activities

This option includes:

-EPA would continue to implement its Indian Policy on reservations and offer grants to tribes and to tribal organizations to develop solid waste management plans.

OPTION C PRO:

1. The pilot projects which EPA has sponsored have increased cooperation and understanding between tribes and the States. The Menominee Tribe's regulations for solid and hazardous waste were primarily based upon the State of Wisconsin's statutes. In North Dakota, Tribal solid waste regulations were initially perceived as a threat by non-Indians living near and in Indian lands. Since then the communication between the Tribes and State has resulted in greater cooperation between the two entities (Popkin, p. 28).

OPTION C CON:

1. Without formal statutory or regulatory recognition of the role of Tribes as States, it may be more difficult to gain cooperation from State agencies which continue to claim jurisdiction over Indian lands. Although not a barrier, these relationships are a hindrance to effective environmental management.

2. EPA pilot projects with Tribes have often encountered delays because the grants for the projects are short-term while complete and effective implementation of the projects requires long-term efforts.

VII. RECOMMENDATION

This paper recommends that Option A, directing EPA's Administrator to change the definition of Tribes under RCRA to States within certain criteria, be carried out.

To implement an adequate environmental program for solid waste, a Tribe requires personnel with legal and technical training, public education for those who contribute to the open dumps, strong Tribal statutes and regulations, enforcement mechanisms, long and short term plans to properly dispose of the waste, and capacity, if necessary, to monitor risks to the water, land, and air.

-Option A is the only option which will adequately address the problem of solid waste on Indian lands on all levels.

-Option A allows Tribes to build their own environmental regulation capabilities with assured support from federal agencies.

-Option A also allows Tribes flexibility in funding and implementation of solid waste projects.

VIII. APPENDICES

A. APPENDIX I: DESCRIPTION OF INDIAN LANDS

Currently, there are 312 federally recognized Indian Tribes. Most of them are based on one or more of the 280 federal reservations. These reservations occupy 87,000 square miles of land (about the size of Maine, Vermont, New Hampshire, Connecticut, Delaware, Rhode Island, New Jersey, and Maryland)

Indian Tribes and lands vary greatly in size, distribution, and history. In 1987, the Bureau of Indian Affairs (BIA) estimated that there were 861,500 Indians living on or near reservation. This figure includes the Tribes in Oklahoma, which possess little or no land but remain eligible for benefits, as well as Native Alaskans who, under the Alaskan Native Claims Settlement Act of 1971, retain control over millions acres of land, but have no reservation boundaries. It should be noted that about half of the residents of Indian reservations, on average, are non-Indian. In addition, there are thirteen state reservations located in six states which are not under the jurisdiction of the federal government. Overall, according to U.S. Census Bureau 1980 figures, 1,534,000 Native Americans and Alaskans live in the United States.

Reservations differ greatly in size and population. Over 160,000 people live on the Navajo Reservations which contains 16,000,000 acres. On the other hand, reservations and rancherias in California are predominantly small. Some have fewer than a dozen people and are less than one square mile in area. The reservation demographics are clouded further by the fact that many Tribal members who live near but not within reservation boundaries are included under federal programs. The BIA figure of 860,000 Native Americans and Alaskan Natives is significantly larger than the U.S. Census Bureau's count of people living in Alaskan villages, reservations, and tribal trust lands at slightly under 500,000. These statistics highlight the diversity which exists amongst Indian tribes.

B. APPENDIX II: PRESENT SOLID WASTE FUNDING SOURCES

The Indian Health Service has, in the past, been the central agency for funding the construction of solid waste facilities and for the planning for solid waste on Indian lands. CDBG as mentioned above, is also a main source of funding for solid waste projects, though this funding is limited by stipulations for use of funds. However, other sources for such activities do exist.

Other funding for solid waste facilities is available from the Bureau of Indian Affairs' the Office of Indian Services under Public Law 93-262. These include:

1. Guaranteed Loan Program which offers an interest subsidy and will guarantee up to 90 percent of a tribal loan from a bank.
2. Direct Loan Program which the BIA itself makes loans to tribes for economic development on reservations in the areas of business, housing, education, etc. The program is a revolving fund, so availability varies

depending upon receipts.
3. Indian Business Development Grant Program which provides equity capital for profit-making business ventures. The grants are able to cover 25 percent of the total project cost. Solid waste projects at least one of these grants to the Oklahoma Tribes for regional planning.
4. BIA is also able to help tribes in acquiring bonds for facility construction.

Other sources provide opportunities for Tribes to fund dimensions of a solid waste project other than the capital cost of a facility. Financial support for solid waste management plans is available from the Department of Health and Human Services under its Administration for Native Americans (ANA). Under the Social and Economic Development Strategies program, ANA awards tribes grants for governance and economic and social development projects involving long-range planning.

C. APPENDIX III: LEGAL BACKGROUND TO TRIBAL SELF-DETERMINATION

The legal title to much of the Indian land is held by the federal government which maintains a trust relationship with the tribes. The federal government, in the role of trustee, is charged to act in the best interest of the Tribal beneficiaries. What constitutes the best interest of a Tribe has, through judicial decisions and executive orders as well as treaties and statutes, evolved into a general definition of promoting tribal self-government and protecting tribal lands and sovereignty. Congressional actions and Court decisions indicate that rights of tribal governments include the powers to administer most of their own environmental programs. The trust responsibility has been invoked to prevent States from asserting their jurisdiction over tribal lands (Pope, 745) and to enable Congress to continue exercising plenary authority over tribes (Christenson, 20). For over 150 years, the courts and, less consistently but more comprehensively Congress, have reinforced the independence of tribal governments while States have attempted to establish a presence in reservations. States frequently consider that Indian lands should be within the boundaries of their jurisdiction, especially when issues like solid waste on Indian lands are perceived as a threat to state environmental quality:

> States find Indian lands an anomaly within states, and they do not like the resultant gaps in their authority within the state's geographical boundaries. Given the ambient nature of pollution, states would like to have uniformity in their ability to control sources of pollution" (Will, 475).

States' desire to regulate tribes goes further, in that non-Indians live, work, and own land within reservation borders. Non-Indians usually own their land outright in "fee simple" and have title to their holdings. This complicates the issue of jurisdiction. Jurisdictional disputes have often centered over the checkerboard pattern of Indian and non-Indian lands on reservations. on Indian lands. (Christenson, p.2)

Though tribal governments are not equivalent to States in all respects and although federal policy toward the Tribes has fluctuated greatly, the

doctrine of tribal self-government has been and is increasingly a dominant theme in the governance of tribes. Specifically, Tribes have the right to form their own governments, regulate property, administer civil justice and prosecute non-major crimes among tribal members through a tribal court system, control conduct of tribal members and non-members through regulatory legislation, and levy taxes. Tribal regulatory powers over its environment are included under these powers of self-government (NCAI, p.43).

The first case which asserted tribal independence was Worcester v. Georgia in 1832. The Supreme Court ruled in this case concerning permits to live in Cherokee Indian country that Tribes' powers are "not, in general, delegated powers granted by express acts of Congress, but rather inherent powers of a limited sovereignty which has never been extinguished" (Pope, 743).

Influenced by legislation such as the General Allotment (Dawes) Act of 1887, which attempted to incorporate individual Indians into traditional American lifestyles by requiring Indians to hold title to land in fee simple similar to the Homestead Act, the Court allowed a few instances of state incursion into tribal lands. However, the 1934 Indian Reorganization Act [as amended at 25 USC $461-479 (1982)] outlawed allotment of tribal land and revived tribal political authority. Tribes were allowed to organize a government under a constitution and to exercise executive, legislative, and judicial powers over tribal members.

Congress, pursuant to a policy which came to be known as termination, passed PL 83-280 in the 1950s in an attempt to forgo some federal control over tribal lands. This act transferred limited jurisdiction over tribal lands to States. Court cases soon defined the state authority as being very limited adjudicary powers. Over the last three decades, two legal tests of state jurisdiction have emerged: the infringement test and the preemption test.

The infringement test as established in Williams v. Lee (1957) stated that "state actions which infringe upon the right of Indians to make their own laws are barred" (Christenson). What type of actions exactly constitute infringement was refined by the preemption test in which the Court examines the federal, tribal and state interests involved and makes a decision on which state action would interfere with federal and tribal interests as evident in federal law. Most recently clarified by the Supreme Court in California v. Cabazon Band of Mission Indians, the doctrine is relevant if state jurisdiction is preempted by federal law. In the event that no federal law governs the area, if the action infringes upon federal and tribal interests such as the tribal right to self-sufficiency and economic development, States are forbidden to exercise authority.

States have passed the two tests on occasion, such as in Montana v. U.S. (1981) which hunting rights of non-Indians on reservation land owned in fee simple and in Washington v. Confederated tribes of the Colville Indian Reservation (1980) which decided tax policy on cigarette tax. To date, no States have won cases which concern power to regulate environmental conditions.

What has emerged is known as checkerboard authority on Indian country. Since non-Indian land ownership and populations are often extensive, question of who has the dominant interest in regulating the lands within reservation borders which have extensive non-Indian ownership is still decided on a case-by-case basis when statutes are unclear.

In 1974, Congress passed the Indian Self-Determination and Education Act (PL 93-638) which:

> declared its commitment to the maintenance of the Federal Government's continuing relationship to the Indian people through the establishment of a meaningful Indian self-determination policy which will permit an orderly transition from Federal domination of programs for and services to Indians to effective and meaningful participation by the Indian people in the planning, conduct, and administration of those programs and services.

This act encouraged BIA to contract out it programs to tribal governments. To date, one-third of the BIA budget has been contracted to tribes and to Indian corporations for services such as police.

It was the 1974 act and President Nixon's 1970 national policy of tribal self-determination that President Reagan based his Administrations 1983 Indian Policy (p.1). EPA's Indian Policy was adopted in 1984 and EPA has been making efforts to implement that policy in all policy and program development, including this paper.

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